

VU Research Portal

Pick your verbs with care when you formulate a question!

de Poot, C.; Semin, G.R.

published in

Journal of Language and Social Psychology
1995

DOI (link to publisher)

[10.1177/0261927X950144002](https://doi.org/10.1177/0261927X950144002)

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

de Poot, C., & Semin, G. R. (1995). Pick your verbs with care when you formulate a question! *Journal of Language and Social Psychology*, 14, 351-368. <https://doi.org/10.1177/0261927X950144002>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

PICK YOUR VERBS WITH CARE WHEN YOU FORMULATE A QUESTION!

CHRISTIANNE J. DE POOT
GÜN R. SEMIN

Free University Amsterdam

Two studies examining how the use of action or state verbs in question formulation influences the locus of causal origin in answers are reported. The first study identifies a number of methodological problems for the selection of action and state verbs in the formulation of semantically symmetrical questions. This study shows a semantic asymmetry between action and state verbs. The second study finds support for the hypothesis that questions formulated with action verbs cue the logical subject of the question sentence as the causal origin for answers and that those formulated with state verbs cue the logical object. Additionally, the influence that the actor-observer perspective has on the explanation of social events is shown to be modified by the type of verb used in the formulation of questions. The implications of these findings for a number of basic and applied settings are discussed.

When we speak about social events or relationships to others, we use interpersonal verbs. Such verbs typically refer to either actions (e.g., to help, to deceive, to challenge) or states that are the consequences of unspecified actions (e.g., to surprise, to bore, to thrill) or to states that encapsulate the emotional or cognitive quality of the relationship (e.g., to like, to respect, to notice, to remember). We use such verbs not only to encapsulate and communicate to others descriptions of events that we have experienced or witnessed; we also use them when we inquire about the status and nature of an interpersonal relationship or event (e.g., Does he still hate her? Why did he leave her?).

Broadly speaking, one can distinguish between verbs of action (help, cheat, push) and verbs of state (respect, dislike, love) (cf. Semin & Fiedler, 1988, 1991). Such interpersonal verbs have been shown to mediate a number of systematic inferences (Semin & Fiedler, 1988, 1991; Semin & Marsman, 1994). The focus of the current article is with

AUTHORS' NOTE: *The research reported here was supported by a Netherlands Organization for Scientific Research grant (4-74760 [560-270-066]) to Gün Semin. The authors thank Anne Maass and Sik Hung Ng for their careful, constructive, and critical comments.*

the implications of a particular inference-inviting property (cf. Semin & Marsman, 1994) of these verbs in the context of how one formulates questions and how such formulations systematically modify the answers that are given. The particular type of inference that is relevant for our research has to do with how such verbs mediate inferences about who initiates an event. Indeed, this is probably the most widely researched aspect of interpersonal verbs (e.g., Abelson & Kanouse, 1966; Au, 1986; Brown & Fish, 1983; Fiedler & Semin, 1988; Semin & Marsman, 1994, *inter alia*). When asked to identify who initiated the event described in simple subject-verb-object sentences that are constructed with action verbs (e.g., John helped David), subjects predominantly identify the sentence subject (John). By contrast, for sentences with state verbs (e.g., John likes David), the same question leads to sentence object inferences (David). This particular inference pattern about event initiation is better known as "the causality implicit in interpersonal verbs" (cf. Brown & Fish, 1983), and research into the cognitive processes mediating this phenomenon has been relatively prolific because there is no obvious linguistic explanation to this phenomenon (cf. Brown & Fish, 1983; Fiedler & Semin, 1988; Hoffman & Tchir, 1990; Semin & Marsman, 1994). Indeed, this systematic inference pattern is not new and has its intellectual precursors (e.g., Abelson & Kanouse, 1966; Garvey & Caramazza, 1974; Garvey, Caramazza, & Yates, 1976; Gilson & Abelson, 1965; McArthur, 1972).

More recently, Semin, Rubini, and Fiedler (1995) have applied this finding in the context of what they referred to as the "Question-Answer paradigm." These authors were interested in finding out how the event-initiating feature of interpersonal events influences the answer of subjects and transposes the inferential feature mediated by interpersonal verbs into the context of formulating different questions. Is it the case that people answer two questions (one formulated with an action verb and the other with a state verb) that appear to be similar on the surface in the same manner or differently? If one were asked "Why do you *like* the Tribune?" or "Why do you *read* the Tribune?" then both questions may appear to be requests to explain one's newspaper preference. If the verb type in the question mediates different inferences about who is at the origin of the event, then such verb choices should influence open-ended answers if they are used in question formulation. Indeed, Semin et al. (1995) found in two independent studies that questions formulated with action verbs cue the logical subject of a question sentence as the causal origin for answers (e.g., I read the Tribune because *I* . . .). They found the reverse tendency for questions formulated with state verbs (e.g., I like the Tribune because *it* . . .). In answers to questions with state verbs, the logical object of the question was found to be the causal origin.

The Question-Answer paradigm captures one of those critical situations in which an asymmetrical power relation is represented (see Ng &

Bradac, 1993), namely the interview situation. It is therefore critical to understand the contribution that simple language use strategies can make to the shaping of such situations, which are encountered in the context of legal cases, police interviews, and clinical interviews, to name just a few.

However provocative Semin et al.'s (1995) research may be, the two studies they report have some substantial shortcomings. One of these is to be found in the number of verbs they have investigated. Over the two studies, they sample three action verbs (to go, to read, to join) and one state verb (to like). Further, the questions they formulate are not about interpersonal events but about preferences (e.g., Why do you like [read] a newspaper? Why do you like [join] a political party?). Most importantly, these studies assume (implicitly) that there is a semantic equivalence between the state and action verbs that have been employed. The mere fact that the same state verb (like) is used for comparison with the three action verbs suggests that such an equivalence between state-verb-formulated and action-verb-formulated questions cannot be assumed. Such a semantic equivalence assumption is critical in this type of research because if the semantic implications of the questions are entirely different as a function of the verb type that is used, then it is not surprising that answers to such questions will also be different.

STUDY 1: THE EQUIVALENCE PROBLEM BETWEEN STATE AND ACTION VERBS

Nevertheless, the Question-Answer paradigm presents a rather provocative proposition, and in the first study reported here we examined, first of all, the question of semantic equivalence between state and action verbs. This is an important issue because if the Question-Answer paradigm is supposed to have any generality, then it should be shown that in any question one need only change the sentence verb from an action verb to a state verb or vice versa and yet retain the same meaning. If one considers state verbs and action verbs, then there would appear to be an interdependent relationship between the two. States usually act as motives for action (e.g., I ran away from Paul because I feared him). Yet, actions often give rise to states (e.g., Cheating somebody evokes distrust in the person).¹ Indeed, there is indirect evidence for this relationship in studies examining the antecedents and consequences of sentences with action and state verbs (cf. Semin & Fiedler, 1992). However, because state verbs have been shown repeatedly to be a more abstract verb category than action verbs (cf. Semin & Fiedler, 1988, 1991, 1992), a semantic asymmetry is built into such categories as a distinctive feature of these categories. Thus a state verb (which can be seen as a motive) can generate multiple divergent actions. If Pat likes Mary, then Pat might give Mary a bunch

of flowers, invite her to the concert, help her with a problem, jog with her, and so on. By contrast, an action has a more limited number of motives to which it can be reduced. John may confide in David because he trusts him. In the present study, we examined precisely this hypothesis. If one set of subjects is given a series of state verbs with the task of generating the actions they think may follow from each state verb and another set of subjects is given a series of action verbs with the instruction to generate as many states that may have given rise to the respective actions, then the following prediction could be made: The number of actions generated from states will be greater than the number of states inferred from actions. Further, a corollary of this hypothesis is that the actions to which a motive can lead belong to more different semantic categories than do the motives to which an action can be reduced. To examine these two hypotheses, we randomly chose a set of action and state verbs from a comprehensive corpus of Dutch interpersonal verbs and asked subjects to generate as many states or actions as they could think of depending on the type of stimulus they received.

METHOD

Subjects. A total of 36 subjects participated in this study on an unpaid voluntary basis. They were between 18 and 25 years of age, and all were native Dutch speakers.

Stimulus material. The stimulus material consisted of 14 action verbs and 14 state verbs, balanced for valence (positive vs. negative).² They were selected randomly from a corpus of interpersonal verbs in Dutch.

Procedure. The experiment was run in a small lecture room. Each subject received a booklet consisting of 15 pages. The cover page provided the instruction in which the goal of the experiment, the difference between states and actions, and the task that subjects had to carry out were explained clearly. The rest of the booklet contained 14 stimulus words, half of the selected actions and half of the selected states, each on a separate page. The presentation of stimulus words was randomized for each subject. The category of each stimulus (action or state) and the required response category (state or action) were stated explicitly on each page.

RESULTS

Each stimulus word was given to 18 subjects. An ANOVA with items as random factor with the between-items factors Verb Type and Valence was carried out over the *total* number of words (disregarding mention of identical words) generated per verb. This ANOVA showed a signifi-

cant effect for the factor Verb Type ($F[1, 27] = 9.98, p < .001$), showing that state verbs elicited a significantly higher number of words overall than did action verbs. In contrast to an average of 3.81 actions generated for each of the state verbs, action verbs elicited an average of only 2.83 state referents. In a further analysis, we coded how many distinct alternates were mentioned per verb; that is, we combined identical words and thus eliminated terms that were repeated across subjects and synonyms. The next analysis of variance with the between-items factors Verb Type and Valence employed the number of distinctive alternatives mentioned per stimulus. This ANOVA yielded a strong Verb Type effect ($F[1, 27] = 40.16, p < .001$), supporting the hypothesis that action verbs generate fewer states ($M = 1.28$) if one compares them with the number of actions that state verbs generate ($M = 2.23$). Thus, for a given action verb, there was more consensus among subjects about the state that gave rise to it. By contrast, a particular state verb gave rise to twice as many alternatives, on average.

DISCUSSION

The results confirm the prediction that there is a semantic asymmetry between action verbs and state verbs. This, in a sense, is not surprising given that the latter have been shown repeatedly to be more abstract in previous research (Maass, Salvi, Arcuri, & Semin, 1989; Semin & Fiedler, 1988, 1991). The types of actions to which a state can lead are more indeterminate in comparison to the states that can underlie an action. The findings show that the action-to-state relationship is a more determinate one than is the state-to-action relationship. In principle, this implies that for any given state (e.g., to like), in the *abstract*, there is a range of different actions (e.g., to help, to join, to invite, to support) that is equiprobable. This finding poses considerable difficulties in interpreting the validity of the Question-Answer paradigm as it has been examined by Semin et al. (1995). If a person is asked why he or she likes a political party or a newspaper, then the range of actions (aside from everything else) that he or she can visualize in relation to the object of preference is varied. By contrast, if the same object preference question is asked with an action verb (e.g., why one joins a political party or reads a particular newspaper), then the range of motives for such preferences is more limited.³

STUDY 2: PICKING YOUR VERBS MORE CAREFULLY IN FORMULATING QUESTIONS

In the light of these results, one has to introduce at least three methodological checks to be able to test the Question-Answer paradigm

unequivocally. The first one is to select action and state verbs that have an equiprobable transitive relationship; that is, the likelihood of the state verb eliciting the action in question is symmetrical to the likelihood of the action being derived from the same state. Further, the state and action verbs should not elicit other counterparts (actions and states, respectively) with a comparable probability. This methodological question, if resolved, is the one possible way to examine whether verb type in question formulation actually mediates the manner in which an answer is formulated. The second point is that the range of state and action verbs has to be increased so that the impact of verb type in question formulation can be a generalizable one. And, finally, the questions should be directed toward interpersonal events rather than preferences. These specific methodological issues provided the framework for the second study reported here. This framework allowed us to test the generalizability (larger sample of verb choice) and validity (implications for the interpersonal domain) of the proposed paradigm.

Additionally, we extended the theoretical underpinning and implications of the Question-Answer paradigm. The Question-Answer paradigm states that the verb type in the formulation of a question directs the focus of attention in the answer to the event initiator; questions formulated with action verbs direct the focus of attention in the answer to the subject as event initiator (Why do you *read* the Tribune? Because *I* . . .), whereas questions formulated with state verbs direct the focus of attention to the object as event initiator (Why do you *like* the Tribune? Because *it* . . .). The verb choice thus influences whether the emphasis in an answer will be on the sentence subject or the sentence object as the event initiator (cause). In the context of an interpersonal situation, in contrast to preference questions, this generalization to interpersonal situations opens a different perspective that has some serious implications. For instance, in the context of a rape interview, the interviewer has a number of options. Assume that the victim met the perpetrator during a dance. Given the fact that the victim and perpetrator danced with each other, the interviewer has the choice of asking either "Did you dance with *him*?" or "Did *he* dance with you?" Given that the answer in both cases is yes, the choice of who occupies the question subject and question object may be of considerable significance. Thus the generalized version of the Question-Answer paradigm introduces a more versatile application of it to a variety of contexts.

The theoretical argument underlying the Question-Answer paradigm is based on a "principle of consistency" (cf. Brown & van Kleeck, 1989), namely: Questions formulated with interpersonal verbs should elicit answers that refer predominantly to the *event instigator* in the question as the *event instigator* in the answer. This principle constitutes the first hypothesis to be tested in this second study, namely: Respondents, in formulating answers to a question worded with either an action verb or a state verb, will show a systematic difference in who

they put in the event initiator position in their answers as a function of the verb type in the question.

The second hypothesis examined in this second experiment is derived directly from the first hypothesis. If it is the case that action verbs in question formulation focus attention on the sentence subject and that state verbs focus attention on the sentence object, then the following question arises: Is the influence of the verb type used in question formulation such that it modifies the traditional actor-observer bias (cf. Jones & Nisbett, 1972; Watson, 1982)? The predominant tendency obtained in such work has been that whereas actors, when explaining social events, focus their attention on external factors, observers focus their explanations of social events on the actors. The Question-Answer paradigm, however, suggests that the verb type in a question influences the focus of attention in an explanation. Thus whereas state verbs focus attention on the question object, action verbs focus attention on the question subject. A number of studies have suggested that the actor-observer bias may be a perceptually mediated phenomenon (e.g., Storms, 1973), but there is some evidence that linguistic factors may also play an important role (e.g., Salancik, 1974, 1976; Salancik & Convey, 1975) and that the actor-observer bias may be a language-based one. Previous work suggests that the bias is certainly manifested in freely provided explanations for social events. For instance, Semin and Fiedler (1989) analysed freely generated descriptions from actors' and observers' perspectives on the basis of the types of linguistic categories prevalent in such descriptions and replicated previous findings by Nisbett, Caputo, Legant, and Maracek (1973) very closely. More recent research provides further convergent evidence for this view (Fiedler, Semin, Finkenauer, & Berkel, 1995; Fiedler, Semin, & Koppetsch, 1990).

If, as the more recent research suggests, the actor-observer bias is manifested in language use, then one would expect the type of manipulation inherent to the Question-Answer paradigm to modify the actor-observer bias. The verb type in a question is effectively a perspectival manipulation. A question with an action verb introduces an observer's perspective. Thus a question such as "Why do you *read* the Tribune?" focuses the attention on the agent who is doing the reading. The agent has to see himself or herself from the observer's perspective and give explanations about why *he or she does* something. The answer is expected to start with "Because I . . .". By contrast, a state verb in a question induces an actor's perspective. Thus the question "Why do you like the Tribune?" invites the agent to consider the environmental (or object-related) explanations. The answer is expected to start with "Because the Tribune . . .".

As the research on the actor-observer phenomenon suggests (e.g., Salancik, 1976; Semin & Fiedler, 1989), the phenomenon is language based and it is likely that a perspective manipulation introduces an

indirect linguistic manipulation. One can therefore surmise that a particular perspective condition (e.g., that of the actor) is effectively translated indirectly to a specific linguistic strategy for explanation (namely, to describe an event in a distinct manner with regard to who or what initiated an event). This means that there are two possible perspective manipulations. One is the shift in focus of attention that is introduced by a perspective manipulation (actor vs. observer) that has the effect of being *indirectly translated to a strategic language use in explanations*. The second type of shift is a *direct linguistic manipulation* of perspective determined by the choice of the verb type in a question. To the extent that the actor-observer phenomenon can be regarded as an integral part of language production (e.g., Salancik, 1976; Semin & Fiedler, 1989), a language-based manipulation of focus of attention should have a stronger impact than should a perspectival (actor vs. observer) one.

The third hypothesis derives from the principle of consistency argument and suggests that the predicate use in the formulation of answers will vary systematically as a function of the verb type in the question. Previous work (Semin & Fiedler, 1988, 1991) has shown that state verbs are more abstract than action verbs. From other research (Fiedler et al., 1990), we also know that abstract primes cue more abstract inferences whereas concrete primes cue more concrete inferences. From this, it follows that if questions are formulated with abstract verbs (e.g., state verbs), then answers to such questions are expected to have more abstract predicates compared to answers to questions formulated with concrete verbs (e.g., action verbs).

To examine these hypotheses, we designed an experiment in which we manipulated the verb type in question formulation (action vs. state), manipulated the respondents' perspective (actor vs. observer), and examined the relative proportion of references to the focal (event initiator) and nonfocal clauses in the open-ended answers subjects gave to a series of questions about interpersonal events. Additionally, in the construction of the experiment and the experimental manipulations, we took special care to eliminate earlier shortcomings in the examination of the Question-Answer paradigm.

METHOD

Subjects. A total of 34 subjects participated in this experiment on a paid voluntary basis. They all were native Dutch speakers and were between 18 and 28 years of age.

Procedure. Prior to selecting the particular set of action and state verb pairs, we conducted a pilot study with 41 subjects who had to rate the likelihood of co-occurrence of 37 state verb-action verb pairs. For each pair, subjects had to rate the likelihood of occurrence of the action

given the state and the likelihood of occurrence of the state given the action. This way, subjects had to judge the likelihood of occurrence of 74 verbs. The verb pairs were presented in a fixed random order. For all verb pairs, the state-action co-occurrence likelihood was quite high on a 9-point scale ranging from *not likely* (1) to *very likely* (9). The overall mean rating for the likelihood of an action occurring given a state was 6.83. The average likelihood of a state occurring given an action was 6.44. This difference was significant, $F(1, 40) = 19.11, p < .01$. However, this overall difference was not reflected in all cases. On the basis of this pilot study, we chose a set of 8 state verb–action verb pairs that had the most symmetrical ratings (see Table 1). We chose these 4 positive and 4 negative state verb–action verb combinations for the main experiment.⁴ Subjects received 8 sets of questions in a random order. The cover page to the booklet they received informed them that they were participating in a study about how people remember events that they had experienced themselves as well as events that they knew from descriptions, namely events their friends or acquaintances had experienced and told them about. The rest of the eight-page booklet contained the prompts for the 8 events that the subjects had to remember. To ascertain the semantic comparability of the questions, we asked subjects to recall an event in which both the action and the state in question had occurred. Thus subjects were asked, for example, to “recall a specific event when [they] trusted somebody and confided in this person” or “feared somebody and ran away from this person.” The order of the action-state or state-action prime was balanced over subjects. Thus we primed the interpersonal event that was to constitute the object of each inquiry with both a state verb and an action verb at the same time. The subjects were then instructed to describe this event. After they had remembered and written down the event, they were asked to explain why the event had occurred by answering a question formulated by either the relevant action verb or the relevant state verb (Verb Type manipulation). Half of the events they had to describe were events that had happened *to them*, and half were events that had happened *to a friend* of theirs (Perspective manipulation: actor vs. observer).

Design. The independent variables were Verb Type in question formulation (action vs. state), Type of Event Prime (action verb first/state verb second vs. state verb first/action verb second), and Perspective (actor vs. observer). All three factors were within-subject factors. Verb valence was controlled for within Verb Type but randomized over the other conditions. Therefore, Valence (positive vs. negative) was analysed only in ANOVAs that treated items as the random factor.

Coding of the answers. The answers were content analysed with respect to the types of predicates subjects used in their answers and

Table 1

Verb Material Used in Study 2: Pilot Data on Co-occurrence Likelihood

Verbs	State Verbs		Action Verbs		<i>F</i> (1, 40)
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Trust-Confide	7.97	0.85	8.24	0.79	n.s.
Care-Help	7.68	1.23	7.09	1.22	6.54*
Desire-Make a date	7.19	1.52	6.63	1.82	n.s.
Prefer-Choose	7.82	1.48	8.09	0.97	n.s.
Fear-Flee	6.75	1.54	7.46	1.71	8.17**
Distrust-To catch out	7.48	1.64	8.04	1.34	n.s.
Hate-Run down	6.39	1.65	6.73	1.65	n.s.
Despise-Belittle	6.58	1.71	7.09	1.62	n.s.

* $p < .05$; ** $p < .01$.

with respect to the source of causal origin, or event instigator (self vs. other). The reliability of the coding was undertaken by two independent coders who were blind to the conditions. The coding scheme was as follows. The sentences the subjects produced in their answers to action verb questions were coded as *subject-focused explanations* when the grammatical subject of the question-sentence was mentioned (a) in the grammatical subject position in action verb sentences and (b) in the grammatical object position in state verb sentences. By contrast, these sentences were coded as *object-focused explanations* when the object of the question-sentence was mentioned (a) in the subject position in action verb sentences and (b) in the object position in state verb sentences. The reverse coding was applied for the sentences subjects produced in their answers to state verb questions. In the case of adjectives, the coding was dependent on whether the adjective was used with reference to the sentence subject or sentence object. The intercoder reliability was 92%. This is very much in line with earlier reliability coefficients obtained across different language communities (e.g., Fiedler, Semin, & Bolten, 1989; Maass et al., 1989; Semin & Fiedler, 1989; Semin et al., 1995).

RESULTS

We conducted two sets of ANOVAs to examine the main hypothesis that verb type in question systematically modifies the focus of explanation in answers, namely that answers to questions formulated with action verbs display a tendency to treat the subject of the question as the originator of the event whereas questions formulated with state verbs display the reverse tendency. Because Type of Event Prime has no main or higher order effects, it is not mentioned here. The first ANOVA treated subjects as the random factor ($F1$) with Causal Origin Reference (subject vs. object), Verb Type (action vs. state), and Perspec-

tive (actor vs. observer) as the three within-subject factors. The second ANOVA treated the items (verb pairs) as the random factor ($F2$) with the same three factors, except that Valence was introduced as a between-items factor. The dependent variable was the arcsine transformed proportions of subject and object references in the answers.⁵ As expected, we found a significant interaction between Verb Type and Causal Origin Reference, $F1(1, 33) = 99.49, p < .01$; $F2(1, 6) = 64.17, p < .01$; $\min F'(1, 15) = 39.00, p < .01$. For all the analyses, we also report F' (cf. Clark, 1973), which is relevant to identify the generalizability from the subset of verbs used in this study. As can be seen from Table 2, questions formulated with action verbs focus the answers to the sentence subject. By contrast, questions formulated with state verbs focus the answers to the question object. Post hoc comparisons (Duncan's procedure [cf. Kirk, 1968]) of the means showed that all four means are significantly different from each other ($p < .01$). The only other effect that reaches significance is the main effect for Causal Origin Reference ($F1[1, 33] = 76.48, p < .01$; $F2[1, 6] = 19.47, p < .01$; $\min F'[1, 9] = 15.52, p < .01$), suggesting that there were significantly more references to the sentence object ($M = .61$) than there were to the sentence subject ($M = .31$). All other main effects and higher order interactions were not significant; all F s < 1.00 . Most importantly, we did not find any significant main effects or interactions due to the Perspective manipulation, suggesting that the perspectives of actor versus observer do not influence Causal Origin Reference.

Finally, we examined the hypothesis that subjects' answers will be more abstract to questions formulated with state verbs than they will to questions formulated with action verbs. This was done by computing an abstraction score (cf. Semin & Fiedler, 1989). Thus the different predicates used by respondents in their answers were coded according to the Linguistic Category Model (cf. Semin & Fiedler, 1988, 1991, 1992), which distinguishes between four verb categories (descriptive action verbs, interpretive action verbs, state action verbs, and state verbs) and an adjective category. The computation of the abstraction score was accomplished by a simple monotonic weighting scheme using 1, 2, 3, and 4 to weigh the frequency of the four respective linguistic categories⁶ divided by the total number of predicates used. The resulting score is akin to an ordinal scale measure indicating the degree of abstraction involved in language use.

To test the differences in abstraction as a function of verb type in question formulation, we conducted two ANOVAs, the first with subjects as the random factor ($F1$) with the within-subject factors Verb Type (action vs. state) and Perspective (actor vs. observer) and the second with items as the random factor ($F2$) with the within-item factors Verb Type (action vs. state) and Perspective (actor vs. observer) and the between-items factor Valence (positive vs. negative). The abstraction score constituted the dependent variable. We obtained the

Table 2

*Proportion of Question Subject Versus Question Object
References in Answers as a Function of Verb Class*

	Object	Subject
State verb	.83	.08
Action verb	.39	.54

expected main effect for Verb Type, $F1(1, 33) = 5.17, p < .05$; $F2(1, 6) = 12.01, p < .05$; $\min F'(1, 33) = 3.61, p = .063$. Questions with state verbs produced answers that were more abstract ($M = 2.83$) than those produced by action verb questions ($M = 2.62$). No other main effects or higher order interactions reached significance. A more detailed analysis of how this effect comes about can be seen by an analysis of the arcsine transformed proportions of the respective linguistic categories by Verb Type. As can be seen in Table 3, there is a significant interaction between Verb Type in question and linguistic category use. This allows us to display more precisely how the abstraction differences reported here come about, $F1(4, 132) = 4.94, p < .01$; $F2(4, 28) = 3.38, p < .05$; $\min F'(4, 72) = 2.07, p < .10$.

As can be seen in Table 3, this interaction is due to the fact that questions with action verbs give rise to higher proportions of interpretive action verbs and lower proportions of state verbs and adjectives than do questions with state verbs. Post hoc comparisons (Duncan's procedure [Kirk, 1968]) using the error term of the Verb Type shows that the differences are significant for interpretive action verbs ($p < .05$), for adjectives ($p < .05$), and a tendency for state verbs ($p < .07$). The other differences are not significant. Finally, the linguistic category main effect is, not surprisingly, significant, $F1(4, 132) = 82.88, p < .01$; $F2(4, 28) = 39.18, p < .01$; $\min F'(4, 58) = 26.60, p < .01$.

DISCUSSION AND CONCLUSIONS

The study reported here supports the consistency principle advanced by the Question-Answer paradigm. We find that answers refer predominantly to the *event instigator* in the question as the *event instigator* in the answer. Thus when subjects formulate answers to the same question worded with either an action verb or a state verb, they show a systematic difference in who they put in the event initiator position in their answers as a function of the verb type in the question. When the question is formulated with an action verb, the question subject is used as the event initiator (causal source) in the formulation of the answers. By contrast, when the question is formulated with a state verb, subjects use the question object as the event initiator

Table 3
Proportion of Linguistic Category Use as a Function of Verb in Question

	Descriptive Action Verbs	Interpretive Action Verbs	State Action Verbs	State Verbs	Adjectives
State verb	.09	.33	.01	.22	.35
Action verb	.08	.43	.03	.17	.29

(causal source) in their answers. These findings generalize the earlier results obtained by Semin et al. (1995) by controlling for a number of problematic methodological issues that were unattended in these earlier studies. The study generalizes previous findings offered in the context of preference questions to questions about interpersonal events and to a broader set of interpersonal verbs. Further, this study made an important contribution to ascertaining the similarity between questions formulated with action verbs and questions formulated with state verbs. This was done not only by utilising action and state verbs that had the highest co-occurrence likelihood but also by using both verbs simultaneously to prime past events in the first instance. The critical manipulation (verb type) was introduced only after the event was primed by both an action verb and a state verb. The fact that the results of the current study converge with those reported by Semin et al. (1995) suggests that the phenomenon examined by the Question-Answer paradigm is a rather robust one.

The second hypothesis under examination also finds support. It was reasoned that if the actor-observer bias is manifested in language use, then one would expect the type of manipulation inherent in the Question-Answer paradigm to modify the actor-observer bias. In effect, the actor-observer bias is based on a manipulation of what is regarded as focal in the explanation of a social event. In everyday life, this is a naturally distributed perspective; some people act and others observe. As a consequence, one finds biases in the reporting language. So much has been shown by previous studies that use the actor-observer perspective manipulation (e.g., Semin & Fiedler, 1989). If the perspective (actor vs. observer) and the verb type used in a question (action vs. state) both influence the focus of explanation of a social event, then the shifts in focus of attention introduced by the verb type in the question should be much more influential in shaping answers than should a mere manipulation of perspective (e.g., actor vs. observer), and this is precisely what we find in the study reported here. The perspective manipulation introduces no significant main effect or higher order interaction. This lends support to the idea that the phenomenon is an integral part of language production and that a linguistic manipulation of focus of attention has a stronger impact than does a perspectival (actor vs. observer) manipulation.

These findings suggest that a subtle manipulation of a single word in the formulation of a question has powerful effects in how answers are formulated. The main point is that the verb type in the question systematically modifies who the causal source of the explanation becomes. The analysis of the types of predicates in the answers provides an additional differentiation of these findings. Thus, if the verb type is more abstract, then the answers are more abstract due to a less frequent use of interpretive action verbs and a more frequent use of adjectives and, to some extent, state verbs in the answers to questions formulated with state verbs. These latter findings have interesting implications for the types of cognitive inferences one can draw from such answers that vary systematically on a dimension of abstraction-concreteness. Previous research (Fiedler et al., 1995; Maass & Arcuri, *in press*; Maass et al., 1989; Semin & Fiedler, 1988) has demonstrated that, for instance, with increasing abstraction of the information conveyed about a person or a group, the expectancy that the qualities in question will be repeated in the future increases. The implications of this for intergroup biases, and in particular the linguistic intergroup bias, have already been drawn out (cf. Maass et al., 1989, *inter alia*). What is important in the present context is that such manipulations of the abstractness or concreteness of the language used are influenced by the manipulation of a subtle linguistic cue. An interesting and important task for future research is whether subjects themselves are aware of the cognitive implications that their answers have. Equally important is the question of whether third parties who listen to or read these answers are aware of such cognitive implications. Another implication of these findings is the type of self-disclosure such verb choices induce for the respondents. Thus questions with action verbs lead the respondents to produce more information about themselves, whereas questions with state verbs do this to a much lesser extent. Do such differences in questioning lead to differential shaping of the interpersonal relationship between respondents and interviewers? Do differences in question formulation influence memory for recalled events in systematic ways? These are the types of social psychological questions that arise in the context of the Question-Answer paradigm.

Finally, it should be noted that the Question-Answer paradigm falls into a research tradition that has to do with the effects of question formulation (e.g., Clark & Shober, 1992; Smith & Clark, 1993; Swann, Giuliano, & Wegner, 1982) and the judgment and memory for complex events (e.g., Loftus, 1975; Loftus & Palmer, 1974). The distinctive feature of the Question-Answer paradigm is the fact that it is based on a systematic effect that is a generic feature of interpersonal verbs and not peculiar to specific features of contexts, formulations, or peculiarities of specific questions.

In closing, we should mention one further aspect of the Question-Answer paradigm that has as yet not been examined. What we have

done so far is merely examine the manipulation of verb type in question formulation. Another gainful procedure of examining the paradigm with regard to its cognitive and affective implications is to keep the sentence verb constant but manipulate the persons who occupy the sentence subject and object positions in questions. Thus the example we used in the introduction becomes important. Say, in the context of a rape interview, the interviewer asks the victim either "Did you dance with him at the party?" or "Did he dance with you at the party?" Given that the fact that they danced is obvious and the answer is yes in both cases, what are the implications of the two different questions? Does the question imply that the interviewer is imputing the victim or the perpetrator to be the originator of the event? Does it mean that a third party listening to the interview infers the victim or the perpetrator to be the initiator of the event? More importantly, does the interviewee perceive any differences between the questions? A systematic examination of the cognitive implications of the Question-Answer paradigm would appear to have potentially critical implications for a variety of real-life phenomena with serious consequences.

The broader context of the Question-Answer paradigm is the interview situation (e.g., police interviews, court cases, clinical settings, job interviews). This is a situation in which an asymmetric power relationship between interviewer and interviewee holds true. This power relationship (see Ng & Bradac, 1993) can be influenced by the strategic choice of words in question formulation. The research that we reported here suggests that the simple but systematic and conscious manipulation of specific features of questions in interviews (e.g., verb type and who occupies the sentence subject and object position) is a powerful device that can influence the answers that interviewees provide. Indeed, if these influences are obtained without the awareness of the interviewee, then the potential implications of this research become very substantial. It would mean that interviewers who subtly control specific linguistic devices in their questions can exercise a considerable amount of influence and thus power over the shaping of answers. What is more, this can potentially occur without the awareness of the interviewee and can have subtle effects on the audience (e.g., jurors) who will be making consequential decisions affecting the interviewee.

NOTES

1. Note that person A's action leads to a motive in person B (A cheats B; B dislikes A). Consequently, person B's state is a motive for person B's action (B dislikes A; B hits A).

2. The verbs used in this study were as follows (we have provided the best English approximations that we could find for these verbs).

State verbs (positive)

geven om	(to care for)
verlangen naar	(to desire)
prefereren	(to prefer)
vertrouwen	(to trust)
bekommeren om	(to care for or be concerned about)
adoreren	(to adore)
bewonderen	(to admire)

State verbs (negative)

wantrouwen	(to distrust)
vrezen	(to fear)
haten	(to hate)
hekel hebben aan	(to dislike)
verachten	(to despise)
benijden	(to envy)
twijfelen aan	(to doubt)

Action verbs (positive)

helpen	(to help)
afspraak maken	(to make a date)
toevertrouwen	(to confide in)
uitkiezen	(to choose)
verzorgen	(to look after)
ophemelen	(to extol)
imiteren	(to imitate)

Action verbs (negative)

bespotten	(to deride)
vluchten voor	(to flee)
rug toekeren	(turn one's back on)
ondervragen	(to question or interrogate)
negeren	(to ignore)
afkraken	(to take a person to the cleaners)
controleren	(to check)

3. These notions are akin to the notion of category breadth examined in relation to trait terms (e.g., Hampson, Goldberg, & John, 1987; Hampson, John, & Goldberg, 1986).

4. At times, a precise translation of these terms is somewhat difficult. In the text, we have provided the best approximations we have been able to find in English.

5. We used arcsine transformations to remove dependencies. Indeed, the proportions were not entirely determinate because a small proportion of the answers in each category made references to both question subject and question object at the same time (e.g., *We discussed the issue hotly*); these are not included in the analyses.

6. We combined interpretive action verbs and state action verbs into the second category because previous research (e.g., Semin & Fiedler, 1991; Semin & Marsman, 1994) suggests that, although semantically different, their inferential properties do not differ from each other. Both were given a weighting of 2.

REFERENCES

- Abelson, R. P., & Kanouse, D. E. (1966). Subjective acceptance of verbal generalizations. In S. Feldman (Ed.), *Cognitive consistency: motivational antecedents and behavioral consequences* (pp. 171-197). New York: Academic Press.

- Au, T. K. (1986). A verb is worth a thousand words: The causes and consequences of interpersonal events implicit in language. *Journal of Memory and Language*, 25, 104-122.
- Brown, R., & Fish, D. (1983). The psychological causality implicit in language. *Cognition*, 14, 233-274.
- Brown, R., & van Kleeck, M. H. (1989). Enough said: Three principles of explanation. *Journal of Personality and Social Psychology*, 75, 590-604.
- Clark, H. H. (1973) The language as fixed-effect-fallacy: A critique of language statistics in psychological research. *Journal of Verbal Learning and Verbal Behavior*, 27, 447-465.
- Clark, H. H., & Shober, M. F. (1992) Asking questions and influencing answers. In J. M. Tanur (Ed.), *Questions about questions* (pp. 15-48). New York: Russell Sage.
- Fiedler, K., & Semin, G. R. (1988). On the causal information conveyed by different interpersonal verbs: The role of implicit sentence context. *Social Cognition*, 6, 21-39.
- Fiedler, K., Semin, G. R., & Bolten, S. (1989). Language use and reification of social information: Top-down and bottom-up processing in person cognition. *European Journal of Social Psychology*, 19, 271-295.
- Fiedler, K., Semin, G. R., Finkenauer, C., & Berkel, I. (1995). Actor-observer bias in close relationships: The role of self-knowledge and self-related language. *Personality and Social Psychology Bulletin*, 21, 525-538.
- Fiedler, K., Semin, G. R., & Koppetsch, C. (1990). Language use and attributional biases in close personal relationships. *Personality and Social Psychology Bulletin*, 17, 147-155.
- Garvey, C., & Caramazza, A. (1974). Implicit causality in verbs. *Linguistic Inquiry*, 5, 459-464.
- Garvey, C., Caramazza, A., & Yates, J. (1976). Factors influencing assignment of noun antecedents. *Cognition*, 3, 227-243.
- Gilson, C., & Abelson, R. P. (1965). The subjective use of inductive evidence. *Journal of Personality and Social Psychology*, 2, 301-310.
- Hampson, S. E., Goldberg, L. R., & John, O. P. (1987). Category breadth and social desirability values for 573 personality terms. *European Journal of Personality*, 1, 241-258.
- Hampson, S. E., John, O. P., & Goldberg, L. R. (1986). Category breadth and hierarchical structure in personality. *Journal of Personality and Social Psychology*, 51, 37-54.
- Hoffman, C., & Tchir, M. A. (1990). Interpersonal verbs and dispositional adjectives: The psychology of causality embodied in language. *Journal of Personality and Social Psychology*, 58, 765-778.
- Jones, E. E., & Nisbett, R. E. (1972). The actor and observer: Divergent perceptions of the causes of behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior* (pp. 79-94). Morristown, NJ: General Learning.
- Kirk, R. E. (1968). *Experimental design procedure for the behavioral sciences*. Belmont, CA: Brooks/Cole.
- Loftus, E. F. (1975). Leading questions and the eyewitness report. *Cognitive Psychology*, 7, 560-572.
- Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior*, 13, 585-589.
- Maass, A., & Arcuri, L. (in press). Language and stereotyping. In N. Macrea, M. Hewstone, & C. Stangor (Eds.), *The foundations of stereotypes and stereotyping*.
- Maass, A., Salvi, D., Arcuri, L., & Semin, G. R. (1989). Language use in intergroup contexts: The linguistic Intergroup bias. *Journal of Personality and Social Psychology*, 57, 981-994.
- McArthur, L. (1972). The how and what of why: Some determinants and consequences of attribution. *Journal of Personality and Social Psychology*, 22, 171-193.

- Ng, S. H., & Bradac, J. J. (1993). *Power in language*. Newbury Park, CA: Sage.
- Nisbett, R. E., Caputo, C., Legant, P., & Maracek, J. (1973). Behavior as seen by the actor and as seen by the observer. *Journal of Personality and Social Psychology*, 27, 154-164.
- Salancik, G. R. (1974). Inference of one's attitude from behavior recalled under linguistically manipulated cognitive sets. *Journal of Experimental Social Psychology*, 10, 415-427.
- Salancik, G. R. (1976). Extrinsic attribution and the use of behavior information to infer attitudes. *Journal of Personality and Social Psychology*, 34, 1302-1312.
- Salancik, G. R., & Convey, C. (1975). Attitude inferences from salient and relevant cognitive content about behavior. *Journal of Personality and Social Psychology*, 32, 829-840.
- Semin, G. R., & Fiedler, K. (1988). The cognitive functions of linguistic categories in describing persons: Social cognition and language. *Journal of Personality and Social Psychology*, 54, 558-567.
- Semin, G. R., & Fiedler, K. (1989). Relocating attributional phenomena within a language-cognition interface: The case of actors' and observers' perspectives. *European Journal of Social Psychology*, 19, 491-508.
- Semin, G. R., & Fiedler, K. (1991). The linguistic category model: Its bases, applications and range. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 2, pp. 1-30). Chichester, UK: Wiley.
- Semin, G. R., & Fiedler, K. (1992). The inferential properties of interpersonal verbs. In G. R. Semin & K. Fiedler (Eds.), *Language, interaction and social cognition* (pp. 58-78). London: Sage.
- Semin, G. R., & Marsman, G. (1994). Multiple inference inviting properties of interpersonal verbs: Event instigation, dispositional inference and implicit causality. *Journal of Personality and Social Psychology*, 67, 836-849.
- Semin, G. R., Rubini, M., & Fiedler, K. (1995). The answer is in the question: The effect of verb causality upon locus of explanation. *Personality and Social Psychology Bulletin*, 21, 834-841.
- Smith, V. L., & Clark, H. H. (1993). On the course of answering questions. *Journal of Memory and Language*, 32, 25-38.
- Storms, M. D. (1973). Videotape and the attribution process: Reversing actors' and observers' point of view. *Journal of Personality and Social Psychology*, 27, 165-175.
- Swann, W. B., Giuliano, T., & Wegner, D. M. (1982). Where leading questions can lead: The power of conjecture in social interaction. *Journal of Personality and Social Psychology*, 42, 1025-1053.
- Watson, D. (1982). The actor and the observer: How are their perceptions of causality divergent? *Psychological Bulletin*, 92, 682-700.